1.3 Stem and Leaf Plots

Stem and Leaf Plot = a graphical way of organizing and presenting a set of data which places the data into categories based on place value.

How to form one:

1) Place data in order

2) Outline 2 columns as such:

Stem	Leaf

3) The last digit in the number is the leaf, and the remaining digits are the stems.

4) The first number in the stem will be the smallest and the last number in the stem will be the largest.

- We collect data to see if there is any pattern found. We do this by viewing if there are clusters formed in the data.

Distribution: how all the data values in a set of data are spread.

Cluster: areas where an increased amount of data is present when a stem and leaf plot is made.

Stem & Leaf Plot	
Advantages	**Disadvantages**
• shows each piece of data individually • highlights where data clusters • looks like a detailed bar graph	• can be awkward to use in large data sets • median is not indicated • does not highlight outliers

Practice:

The following data table contains the average hours per week students in grade 10 watch television.

25.1	28.8	24.8	27.3	26.1
23.4	25.9	24.3	27.0	25.2
26.4	30.2			

Stem	Leaf
23	4
24	3 8
25	
26	
27	
28	

Stem	Leaf
23	4
24	3 8
25	1 2 9
26	1 4
27	0 3
28	8
29	
30	2

25.1	28.8	24.8	27.3	26.1
23.4	25.9	24.3	27.0	25.2
26.4	30.2			

1. Create a stem and leaf plot of the data above.
2. List the greatest amount of time spent watching TV.
3. List the least amount of time spent watching TV.
4. Are there any clusters? What does it tell you?
5. Describe how the data are spread, and what does it tell you about students watching TV.

2. 30.2 hours
3. 23.4 hours
4. Data clusters around 25 hours. The majority of students watch about 25 hours.
5. Students watch between 23 and 30 hours of TV. Students watch too much TV.

Today:

- Finish Stem-and-Leaf plots
- Warm-up
- Work on Box-and-whisker plots

Reminders:

-if you haven't passed your Investigation #2 (the ruler drop) please pass in ASAP

-Extra help will be today instead of tomorrow (12:00 - 12:30)

Classwork/Homework:

- Complete a stem and leaf plot for the following data: 22 27 12 15 9 21 34 50 11 10

Stem	Leaf
0	9
1	0 1 . .
2	
3	

- Complete Questions 5 - 8 on page 17 & 18

(For the above questions, #5-8, use the stem and leaf data on page 17- side margin)

stem	Leaf
0	9
1	0 1 2 5
2	1 2 7
3	4
4	
5	0

- Questions 5 - 8 on page 17 & 18

#5. a) 10.2, 10.7, 11.1, 11.2, 13.8

b) 29.1, 28.9, 28.4, 28.8, 28.6

#6. a) 16, 28

b) The clusters tell you were the majority of data are. In this example, it should tell you that most students had reaction times of 16cm and 28cm

c) spread = Range 29.1 - 10.2 = 18.9

In this example, the spread should tell you that everyone had different answers.

#7. a) median = 18.25 = 18.3 $\bar{x} = 20.2$

20th 21st

18.0 + 18.5 ÷2

b) mean
- no outliers
- closer to being between the 2 clusters.

#8. * The stem-and-leaf would show you more than just one number. You can see clusters of data, you can also see ALL the data.

Warm-Up: #6

1. Place the following data collected from Mrs. Cote's Math quiz given last Friday. The quiz was out of 30 marks, the following are the marks gotten by students. Data is in order.

9, 11, 13, 14, 15, 15, 22, 23, 25, 25, 26, 27, 30

Create a stem and leaf plot with this data

2. Answer the following in relation to the data above.

a) Are there any clusters in the data? Where?

b) Describe how the data are spread. What does this tell you about the student's performance?

c) What is the range of the data?

d) What is the lowest mark in the class?

e) What is the highest mark in the class?